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EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2661	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/620,053	CAO, YANG	
	Examiner	Art Unit	
	Ian N Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the amendment filed on 7/16/04*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-23,25-31,33-38 and 40-42* is/are rejected.

7)☒ Claim(s) *11,24,32 and 39* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. New claims 33-42 are added.
2. Claim objections, on claims 1 and 12 are withdrawn since they are being amended accordingly.
3. Claims rejection based upon USC 112, 2nd paragraph on claims 1 and 12 are withdrawn.

Response to Arguments

4. Applicant's arguments with respect to claims 1-10,12-23,25-27,28-31,33-38,40-42 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 1-6 and 12-17, the applicant argued that,

"...Brueckheimer'224 does not discloses that IP traffic is routed using theses service levels...(in page 13, paragraph 2)...there is no disclosure or suggestion that IP traffic is routed to a circuit switch fabric or a packet switched fabric based on theses service levels...(in page 13, paragraph 3 and page 14, paragraph 3)".

In response to applicant's argument, the examiner respectfully disagrees that Brueckheimer'224 does not discloses that IP traffic is routed using theses service levels...there is no disclosure or suggestion that IP traffic is routed to a circuit switch fabric or a packet switched fabric based on theses service levels. As shown in Brueckheimer'224 clearly stated that routing IP traffic **(see FIG. 1, routing/switching IP traffic from either MPEG-TS Mux 22, UDP/IP SONET framer 23, or UDP/IP Ethernet device)** to the circuit switch fabric **(see FIG. 1, a**

Voice/Circuit switch 25 or Label L2TP MPLS switch 27) or packet switch fabric **(see FIG. 1, a Data/Packet Switch 26 or Label L2TP MPLS switch 27)** depending on an ATM service category of IP traffic **(see FIG. 1, switching/routing based upon ATM's AAL services category types (i.e. AAL 1, 2, and/or 5) between the switches and interface devices; note that MPEG-TS switches AAL 1 towards voice/circuit switch or data/packet switch; see col. 5, lines 51 to col. 6, lines 32, 46-67, col. 7, lines 1-25)**.

In particular, Brueckheimer'224 teaches that IP traffic is encapsulated or mapped into a SONET frame by utilizing UDP/IP SONET framer 22, IP traffic is encapsulated or mapped into a ATM cell by utilizing MPEG-TS Mux 22, or IP traffic is encapsulated or mapped into Ethernet frame by utilizing UDP/IP Ethernet framer 24. Then, the frame or cell (which carries IP traffic) is routed to either a voice/circuit switch (see FIG. 1, switch 25 or 27) or data/packet switch (see FIG. 1, switch 26 or 27). The selection between the switches is based upon ATM service category types (i.e. AAL 1,2, and/or 5) of the frame/cell carrying IP traffic. For example, ATM AAL 1 service category type of frame/cell carrying IP traffic is routed towards circuit/voice switch 25 and ATM AAL2 service category type of frame/cell carrying IP traffic is routed towards data/packet switch 26. Thus, Brueckheimer'224 clearly anticipated claimed invention.

The applicant argued that, "...the combination of the '224 Patent with the '750 Patent may render both or either patents unsatisfactory for their intended purposes or require that the principle of operation of one or both patents be so modified. Figure 1 of the '224 Patent appears to indicate that **both voice and data**

traffic is received by each component within groups 11 and 12. In comparison, Figure 1 of the '750 Patent appears to indicate that either voice (synchronous) or data (packet) signals are **interface module**. Thereafter, the interface separately received by an modules are capable of using **a shared transmission bus**. In sum, either the '224 Patent would have to be modified such that only a single type of traffic is received by each of the components within groups 11 or 12 or the Catellano'750 patent would have to be modified to enable each of the interface modules to receive both voice and data traffic. Because doing so would apparently render one or both patents unsatisfactory for their intended purposes or require their principle of operation to be changed, **Applicants respectfully submit that the combination of the Brueckheimer'224 with Catellano'750 is inappropriate**.." in page 14 and 15.

In response to applicant's argument, the examiner respectfully disagrees that the combination of the Brueckheimer'224 with Catellano'750 is inappropriate at least for the following reasons.

a) in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **interface module, shared transmission bus, receiving both voice and data traffic**) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

b) in response to applicant's argument that the combination of the Brueckheimer'224 with Catellano'750 is inappropriate, the test for obviousness is not

whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Note that **neither of claims recites**, how IP traffic is received at the interface module.

In particular, as recited in the rejected claims, the Catellano'750 teaches provisioning a portion of the circuit switch fabric resources for circuit switched traffic **(see col. 7, lines 23-27; note that portion of the data/traffic transmission bandwidth/resources are dedicated/provisioned for TDM traffic/data transmission)**, and allocating the remaining portion of the circuit switch fabric resources to packet switched traffic (see col. 7, lines 27-29; **note that the remaining portion of the data/traffic transmission bandwidth/resources are dedicated/provisioned for packet traffic/data transmission**).

Note that Catellano'750 is not bodily incorporated into the structure of Brueckheimer'224. Instead the teaching or concepts of Catellano'750's for traffic provision/allocation is utilized, which is clearly stated in rejected claims. Thus, the combination would not render unsatisfactory for their intended purpose, and the combination is appropriate.

The applicant argued that, "...the combination of Brueckheimer'224 with the Catellano'750 does not discloses or suggest allocating circuit switch fabric resources to **IP** traffic falling within an ATM service category..." in page 15, paragraph 2.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **IP**) are not recited in the rejected claim 3. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument, the examiner respectfully disagrees that the combination of Brueckheimer'224 with the Catellano'750 does not discloses or suggest allocating circuit switch fabric resources to IP traffic falling within an ATM service category. Brueckheimer'224 discloses wherein the controller is configured/allocated/provisioned/assigned circuit switch fabric resources/resource-modules to traffic falling within an ATM service category (**see FIG. 1, switching/routing based upon ATM's AAL services category types (i.e. AAL 1, 2, and/or 5) between the switches; see col. 5, lines 51 to col. 6, lines 32, 46-67, col. 7, lines 1-25; note that resources/resource-modules are assigned based upon the traffic/data within ATM AAL categories**). Catellano'750 also discloses allocating circuit switch fabric resources to traffic (**see col. 7, lines 23-27; note that portion of the data/traffic transmission bandwidth/resources are dedicated/provisioned for TDM traffic/data transmission;** see col. 7, lines 27-29; **note that the remaining portion of the data/traffic transmission bandwidth/resources are dedicated/provisioned for packet traffic/data transmission.)** Thus, the combined system of Brueckheimer'224 and Catellano'750 discloses the claimed limitation.

In view of the above, **the examiner respectfully disagrees** with applicant's argument and believes that the combination of references as set forth in the 103 rejections is proper, thus, Claims 2-10,13-23,25-27,28-31, 33-38, 40- 42 are obvious over Brueckheimer'224 in view of Catellano'750 for at least the reasons discussed above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Brueckheimer (U.S. 6,574,224).

Regarding Claims 1 and 12, Brueckheimer'224 discloses an apparatus (**see FIG. 1, Genetic Adaptation Technology Switch Architectural**), to perform a method of routing telecommunication traffic in a hybrid telecommunication switch comprising

at least one circuit switch fabric (**see FIG. 1, a Voice/Circuit switch 25 or Label L2TP MPLS switch 27; note that label switching utilizes tunneling which must be predefined before establishing the connection/circuit, thus it is a circuit**

switch fabric since it switches the circuits/labeled paths/tunnels; see col. 6, lines 12-24, 48-65);

at lease one packet switch fabric (**see FIG. 1, a Data/Packet Switch 26 or Label L2TP MPLS switch 27; note that label switching routes the labeled packets, thus it is also a packet switch fabric; see col. 6, lines 12-24, 66-67, col. 7, lines 1-18**); and

a controller (**see FIG. 2, Adaptation and DSP modules 32 control the switching/routing; see col. 7, lines 30-41**), and the method including the step of:

routing IP traffic (**see FIG. 1, routing/switching IP traffic from either MPEG-TS Mux 22, UDP/IP SONET framer 23, or UDP/IP Ethernet device**) to the circuit switch fabric (**see FIG. 1, a Voice/Circuit switch 25 or Label L2TP MPLS switch 27**) or packet switch fabric (**see FIG. 1, a Data/Packet Switch 26 or Label L2TP MPLS switch 27**) depending on an ATM service category of IP traffic (**see FIG. 1, switching/routing based upon ATM's AAL services category types (i.e. AAL 1, 2, and/or 5) between the switches and interface devices; note that MPEG-TS switches AAL 1 towards voice/circuit switch or data/packet switch; see col. 5, lines 51 to col. 6, lines 32, 46-67, col. 7, lines 1-25**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-6, 10, 13-17, 23,31,38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224 in view of Catellano (U.S. 6,674,750).

Regarding claims 2 and 13, Brueckheimer'224 discloses the controller provisioning/configuring/assigning the circuit switch fabric resources/resource-modules for circuit switched traffic and IP traffic, as the controller routing IP traffic to the circuit switch fabric as described above in claim 1 and 12.

Brueckheimer'224 does not explicitly disclose provisioning a portion of the resources for circuit switched traffic, and allocating the remaining portion of the resources to packet-switched/IP traffic.

However, the above-mentioned claimed limitations are taught by Catellano'750. In particular, Catellano'750 teaches provisioning a portion of the circuit switch fabric resources for circuit switched traffic (**see col. 7, lines 23-27; note that portion of the data/traffic transmission bandwidth/resources are dedicated/provisioned for TDM traffic/data transmission**), and

allocating the remaining portion of the circuit switch fabric resources to packet switched traffic (see col. 7, lines 27-29; **note that the remaining portion of the data/traffic transmission bandwidth/resources are dedicated/provisioned for packet traffic/data transmission**).

In view of this, having the system of Brueckheimer'224 and then given the teaching of Catellano'750, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Brueckheimer'224, for the purpose of providing a mechanism to share bandwidth between TDM and packet switching transmission, as taught by Catellano'750, since Catellano'750 states

the advantages/benefits at col. 6, lines 1-10 and col. 7, lines 31-35 that, it would provide predefined bandwidth allocation since the packet data/traffic transmission no longer has to suspend due to TDM data/traffic transmission. The motivation being that by assigning/provisioning bandwidth/resources to each traffic type, it can reduce the delay and increase throughput since one traffic type transmission no longer need to suspend while the other type is transmitting.

Regarding claims 3, Brueckheimer'224 discloses wherein the controller is configured/allocated/provisioned/assigned circuit switch fabric resources/resource-modules to traffic falling within an ATM service category (**see FIG. 1, switching/routing based upon ATM's AAL services category types (i.e. AAL 1, 2, and/or 5) between the switches; see col. 5, lines 51 to col. 6, lines 32, 46-67, col. 7, lines 1-25; note that resources/resource-modules are assigned based upon the traffic/data within ATM AAL categories)**. Catellano'750 teaches allocating circuit switch fabric resources to traffic as described above in claim 2.

In view of this, having the system of Brueckheimer'224 and then given the teaching of Catellano'750, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Brueckheimer'224, for the purpose of providing a mechanism to sharing bandwidth between TDM and packet switching transmission by allocating bandwidth resources, as taught by Catellano'750, for the same motivation that stated above in Claim 2.

Regarding claim 14, Brueckheimer'224 discloses configuring/allocating/provisioning/assigning circuit switch fabric resources/resource-modules to IP traffic as described above in claim 12. Also, Catellano'750 teaches allocating circuit switch fabric resources to packet traffic as described above in claim 13.

In view of this, having the system of Brueckheimer'224 and then given the teaching of Catellano'750, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Brueckheimer'224, for the purpose of providing a mechanism to allocate resources/bandwidth to packet/IP traffic/data transmission, as taught by Catellano'750, for the same motivation that stated above in Claim 13.

Regarding claims 4 and 15, Brueckheimer'224 discloses routing IP traffic associated with a CBR ATM service category (**see FIG. 1, AAL 1 traffic/data in Voice Switch 25; FIG. 14, voice AAL 1 in AAL/IP interworking module; or FIG. 7, voice AAL 1 in VoIP AAL interworking module**) to the circuit switch fabric (**see col. 6, lines 47-65; note that IP traffic/data is related/associated with AAL 1 (i.e. CBR category) and routed toward the voice switch/AAL/IP interworking module**).

Regarding claims 5,10, 16, 23, 31, and 38, Brueckheimer'224 discloses routing IP traffic associated with a rt-VBR ATM service category (**see FIG. 1, AAL 2 traffic/data in Voice Switch 25; FIG. 14, voice AAL 2 in AAL/IP interworking**

module; or FIG. 7, voice AAL 2 in VoIP AAL interworking module) to the circuit switch fabric (**see col. 6, lines 47-65; note that IP traffic/data is related/associated with AAL 2 (i.e. real time VBR category) and routed toward the voice switch/AAL/IP interworking module**).

Regarding claims 6 and 17, Brueckheimer'224 discloses routing IP traffic associated with an ATM service category which is neither CBR nor rt-VBR traffic (**see FIG. 1, AAL 5 traffic/data in Data/Packet Switch 26; FIG. 14, AAL 5 in AAL/IP interworking module; or FIG. 7, AAL 5 in VoIP AAL interworking module**) to the IP switch fabric (**see col. 6, lines 47-65; note that IP traffic/data is related/associated with AAL 5 (i.e. neither CBR nor real time VBR category) and routed toward the data switch/AAL/IP interworking module**).

7. Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224 and Catellano'750, as applied to claims 1-3 above, and further in view of Ko (U.S. 5,479,407)

Regarding claims 7 and 18, the combined system of Brueckheimer'224 and Catellano'750 discloses the controller allocation circuit switch fabric resources and IP traffic as described above in claims 1-3.

Neither Brueckheimer'224 nor Catellano'750 explicitly discloses a resource table and received request.

However, the above-mentioned claimed limitations are taught by Ko'407. In particular, Ko'407 teaches the controller (see FIG. 12, connection Control Manger

112) allocating available circuit switch fabric resources (see FIG. 12, connection Control Manger 112 allocates the ISDN/circuit switched resources; see col. 7, lines 33-43), as indicated by a resource table (see FIG. 12, Connection Control Manager 112 maintains a table of connection; see col. 7, lines 44-60), to received traffic requests (see FIG. 12, a connection request manager which includes within connection control manager received and handles the connection requests; see col. 7, line 60 to col. 8, lines 5; also see FIG. 18, Call setup/disconnect processor 178, channel allocator/resource manager 172; see col. 17, lines 4-40).

In view of this, having the combined system of Brueckheimer'224 and Catellano'750, then given the teaching of Ko'407, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Brueckheimer'224 and Catellano'750, by providing a connection table for allocating channels per the call setup request, as taught by Ko'407. The motivation to combine is to obtain the advantages/benefits taught by Ko'407 since Ko'407 states at col. 3, line 49 to col. 4, lines 67 that such modification would improve channel utilization for transmission data through an ISDN.

8. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224, Catellano'750 and Ko'407, as applied to claims 1-3 above, and further in view of Caldara (U.S. 5,982,771)

Regarding claims 8 and 19, the combined system of Brueckheimer'224, Catellano'750 and Ko'407 discloses the controller maintain a circuit switch resource table as described above in claims 1-3,7 and 12-13,18.

Neither Brueckheimer'224, Catellano'750 nor Ko'407 explicitly discloses egress resource table.

However, the above-mentioned claimed limitations are taught by Caldara'771. In particular, Caldara'771 teaches controller (see FIG. 1, Bandwidth Arbiter 12) maintains switch ingress (see FIG. 1, a combined system of memory/RAM/resource table 21,20,23 in Input port 14) and egress resource table (see FIG. 1, a combined system of memory/RAM/resource table 48,42,44,46 in Output port 16); see col. 5, lines 10 to col. 6, lines 35).

In view of this, having the combined system of Brueckheimer'224, Catellano'750 and Ko'407, then given the teaching of Caldara'771, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Brueckheimer'224, Catellano'750 and Ko'407, by providing output memory resource table in order to control bandwidth allocation, as taught by Caldara'771. The motivation to combine is to obtain the advantages/benefits taught by Caldara'771 since Caldara'771 states at col. 1, line 50 to col. 4, lines 25 that such modification would efficiently allocates the available bandwidth while assuring that minimum bandwidth and delay requirement of connects are satisfied.

9. Claim 9 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224, Catellano'750, Ko'407, Caldara'771 as applied to claims 1-3,7 above, and further in view of Houji (U.S. 5,832,197).

Regarding claims 9, 25-27, the combined system of Brueckheimer'224, Catellano'750, Ko'407 and Caldara'771 all aspects of the claimed invention set forth

in the rejection of claims 1-3,7 and 8 as described above, in particular, Brueckheimer'224 discloses IP traffic. Ko'407 discloses sending requests to allocated circuit switch ISDN resources.

Neither Brueckheimer'224, Catellano'750, Ko'407, nor Caldara'771 explicitly discloses pass an traffic request to a destination node and to establish an traffic path after having determined that all nodes along the proposed path have accepted an traffic request.

However, the above-mentioned claimed limitations are taught by Houji'197. In particular, Houji'197 teaches pass an traffic request (see FIG. 1, Node N1; also see FIG. 2, step 20, connection request process and pass by Node N1) to a destination node (see FIG. 1, destination Node N5; see FIG. 2, to destination node, step 23) and to establish an traffic path (see FIG. 1, a path between N1 and N5; see FIG. 2, establishing the path, step 23-26) after having determined that all nodes (see FIG. 1, Nodes N2-N4, N7) along the proposed path (see FIG. 1, the lowest QoS path between N1 and N5; see FIG. 2, step 21) have accepted an traffic request (see FIG. 2, steps 23-26; accept request); see col. 2, lines 45 to col. 3, lines 27).

In view of this, having the combined system of Brueckheimer'224, Catellano'750, Ko'407 and Caldara'771, then given the teaching of Houji'197, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Brueckheimer'224, Catellano'750, Ko'407 and Caldara'771, by providing establishing end-to-end path between source and destination node upon accepting the connection request by the nodes along the path, as taught by Houji'197. The motivation to combine is to obtain

the advantages/benefits taught by Houji'197 since a2 states at col. 1, line 30 to col. 2, lines 2315 that such modification would provide an alternate routing in a connection-oriented network in which a plurality of nodes are interconnected by the communication links.

10. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224, Catellano'750, as applied to claims 12-13 above, and further in view of Houji (U.S. 5,832,197).

Regarding claims 20-22, the combined system of Brueckheimer'224, Catellano'750 discloses all aspects of the claimed invention set forth in the rejection of claims 12-13 as described above.

Neither Brueckheimer'224 nor Catellano'750 explicitly discloses pass an traffic request to a destination node and to establish an traffic path after having determined that all nodes along the proposed path have accepted an traffic request.

However, the above-mentioned claimed limitations are taught by Houji'197. In particular, Houji'197 teaches pass an traffic request (see FIG. 1, Node N1; also see FIG. 2, step 20, connection request process and pass by Node N1) to a destination node (see FIG. 1, destination Node N5; see FIG. 2, to destination node, step 23) and to establish an traffic path (see FIG. 1, a path between N1 and N5; see FIG. 2, establishing the path, step 23-26) after having determined that all nodes (see FIG. 1, Nodes N2-N4, N7) along the proposed path (see FIG. 1, the lowest QoS path between N1 and N5; see FIG. 2, step 21) have accepted an traffic request (see FIG. 2, steps 23-26; accept request); see col. 2, lines 45 to col. 3, lines 27).

In view of this, having the combined system of Brueckheimer'224 and Catellano'750, then given the teaching of Houji'197, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Brueckheimer'224 and Catellano'750, by providing establishing end-to-end path between source and destination node upon accepting the connection request by the nodes along the path, as taught by Houji'197. The motivation to combine is to obtain the advantages/benefits taught by Houji'197 since a2 states at col. 1, line 30 to col. 2, lines 2315 that such modification would provide an alternate routing in a connection-oriented network in which a plurality of nodes are interconnected by the communication links.

11. Claims 28 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224 and Catellano'750, and further in view of Ko (U.S. 5,479,407)

Regarding Claims 28 and 33, Brueckheimer'224 discloses an apparatus (**see FIG. 1, Genetic Adaptation Technology Switch Architectural**), to perform a method of routing telecommunication traffic in a hybrid telecommunication switch comprising

at least one circuit switch fabric (**see FIG. 1, a Voice/Circuit switch 25 or Label L2TP MPLS switch 27; note that label switching utilizes tunneling which must be predefined before establishing the connection/circuit, thus it is a circuit switch fabric since it switches the circuits/labeled paths/tunnels; see col. 6, lines 12-24, 48-65**);

at lease one packet switch fabric (**see FIG. 1, a Data/Packet Switch 26 or Label L2TP MPLS switch 27; note that label switching routes the labeled packets, thus it is also a packet switch fabric; see col. 6, lines 12-24, 66-67, col. 7, lines 1-18**); and

a controller (**see FIG. 2, Adaptation and DSP modules 32 control the switching/routing; see col. 7, lines 30-41**), and the method including the step of:

routing IP traffic (**see FIG. 1, routing/switching IP traffic from either MPEG-TS Mux 22, UDP/IP SONET framer 23, or UDP/IP Ethernet device**) to the circuit switch fabric (**see FIG. 1, a Voice/Circuit switch 25 or Label L2TP MPLS switch 27)** or packet switch fabric (**see FIG. 1, a Data/Packet Switch 26 or Label L2TP MPLS switch 27**) depending on an ATM service category of IP traffic (**see FIG. 1, switching/routing based upon ATM's AAL services category types (i.e. AAL 1, 2, and/or 5) between the switches and interface devices; note that MPEG-TS switches AAL 1 towards voice/circuit switch or data/packet switch; see col. 5, lines 51 to col. 6, lines 32, 46-67, col. 7, lines 1-25**);

configured/allocated/provisioned/assigned circuit switch fabric resources/resource-modules to traffic falling within an ATM service category (**see FIG. 1, switching/routing based upon ATM's AAL services category types (i.e. AAL 1, 2, and/or 5) between the switches; see col. 5, lines 51 to col. 6, lines 32, 46-67, col. 7, lines 1-25; note that resources/resource-modules are assigned based upon the traffic/data within ATM AAL categories)**.

Brueckheimer'224 does not explicitly disclose provisioning a portion of the resources for circuit switched traffic, and allocating the remaining portion of the resources to packet-switched/IP traffic.

However, the above-mentioned claimed limitations are taught by Catellano'750. In particular, Catellano'750 teaches provisioning a portion of the circuit switch fabric resources for circuit switched traffic (**see col. 7, lines 23-27; note that portion of the data/traffic transmission bandwidth/resources are dedicated/provisioned for TDM traffic/data transmission**), and

allocating the remaining portion of the circuit switch fabric resources to packet switched traffic (see col. 7, lines 27-29; **note that the remaining portion of the data/traffic transmission bandwidth/resources are dedicated/provisioned for packet traffic/data transmission**).

In view of this, having the system of Brueckheimer'224 and then given the teaching of Catellano'750, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Brueckheimer'224, for the purpose of providing a mechanism to share bandwidth between TDM and packet switching transmission, as taught by Catellano'750, since Catellano'750 states the advantages/benefits at col. 6, lines 1-10 and col. 7, lines 31-35 that, it would provide predefined bandwidth allocation since the packet data/traffic transmission no longer has to suspend due to TDM data/traffic transmission. The motivation being that by assigning/provisioning bandwidth/resources to each traffic type, it can reduce the delay and increase throughput since one traffic type transmission no longer need to suspend while the other type is transmitting.

Neither Brueckheimer'224 nor Catellano'750 explicitly discloses a resource table and received request.

However, the above-mentioned claimed limitations are taught by Ko'407. In particular, Ko'407 teaches the controller (see FIG. 12, connection Control Manger 112) allocating available circuit switch fabric resources (see FIG. 12, connection Control Manger 112 allocates the ISDN/circuit switched resources; see col. 7, lines 33-43), as indicated by a resource table (see FIG. 12, Connection Control Manager 112 maintains a table of connection; see col. 7, lines 44-60), to received traffic requests (see FIG. 12, a connection request manager which includes within connection control manager received and handles the connection requests; see col. 7, line 60 to col. 8, lines 5; also see FIG. 18, Call setup/disconnect processor 178, channel allocator/resource manager 172; see col. 17, lines 4-40).

In view of this, having the combined system of Brueckheimer'224 and Catellano'750, then given the teaching of Ko'407, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Brueckheimer'224 and Catellano'750, by providing a connection table for allocating channels per the call setup request, as taught by Ko'407. The motivation to combine is to obtain the advantages/benefits taught by Ko'407 since Ko'407 states at col. 3, line 49 to col. 4, lines 67 that such modification would improve channel utilization for transmission data through an ISDN.

12. Claims 29 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224, Catellano'750 and Ko'407, as applied to claims 28 and 33 above, and further in view of Caldara (U.S. 5,982,771)

Regarding claims 29 and 34, the combined system of Brueckheimer'224, Catellano'750 and Ko'407 discloses the controller maintain a circuit switch resource table as described above in claims 28 and 33.

Neither Brueckheimer'224, Catellano'750 nor Ko'407 explicitly discloses egress resource table.

However, the above-mentioned claimed limitations are taught by Caldara'771. In particular, Caldara'771 teaches controller (see FIG. 1, Bandwidth Arbiter 12) maintains switch ingress (see FIG. 1, a combined system of memory/RAM/resource table 21,20,23 in Input port 14) and egress resource table (see FIG. 1, a combined system of memory/RAM/resource table 48,42,44,46 in Output port 16); see col. 5, lines 10 to col. 6, lines 35).

In view of this, having the combined system of Brueckheimer'224, Catellano'750 and Ko'407, then given the teaching of Caldara'771, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Brueckheimer'224, Catellano'750 and Ko'407, by providing output memory resource table in order to control bandwidth allocation, as taught by Caldara'771. The motivation to combine is to obtain the advantages/benefits taught by Caldara'771 since Caldara'771 states at col. 1, line 50 to col. 4, lines 25 that such modification would efficiently allocates the available bandwidth while assuring that minimum bandwidth and delay requirement of connects are satisfied.

13. Claims 30 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224, Catellano'750, Ko'407, Caldara'771 as applied to claims 28-29 above, and further in view of Houji (U.S. 5,832,197).

Regarding claims 30 and 40-42, the combined system of Brueckheimer'224, Catellano'750, Ko'407 and Caldara'771 all aspects of the claimed invention set forth in the rejection of claims 28-29 as described above, in particular, Brueckheimer'224 discloses IP traffic. Ko'407 discloses sending requests to allocated circuit switch ISDN resources.

Neither Brueckheimer'224, Catellano'750, Ko'407, nor Caldara'771 explicitly discloses pass an traffic request to a destination node and to establish an traffic path after having determined that all nodes along the proposed path have accepted an traffic request.

However, the above-mentioned claimed limitations are taught by Houji'197. In particular, Houji'197 teaches pass an traffic request (see FIG. 1, Node N1; also see FIG. 2, step 20, connection request process and pass by Node N1) to a destination node (see FIG. 1, destination Node N5; see FIG. 2, to destination node, step 23) and to establish an traffic path (see FIG. 1, a path between N1 and N5; see FIG. 2, establishing the path, step 23-26) after having determined that all nodes (see FIG. 1, Nodes N2-N4, N7) along the proposed path (see FIG. 1, the lowest QoS path between N1 and N5; see FIG. 2, step 21) have accepted an traffic request (see FIG. 2, steps 23-26; accept request); see col. 2, lines 45 to col. 3, lines 27).

In view of this, having the combined system of Brueckheimer'224, Catellano'750, Ko'407 and Caldara'771, then given the teaching of Houji'197, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Brueckheimer'224, Catellano'750, Ko'407 and Caldara'771, by providing establishing end-to-end path between source and destination node upon accepting the connection request by the nodes along the path, as taught by Houji'197. The motivation to combine is to obtain the advantages/benefits taught by Houji'197 since a2 states at col. 1, line 30 to col. 2, lines 2315 that such modification would provide an alternate routing in a connection-oriented network in which a plurality of nodes are interconnected by the communication links.

14. Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brueckheimer'224, Catellano'750, Ko'407, as applied to claims 33 above, and further in view of Houji (U.S. 5,832,197).

Regarding claim 35-37, the combined system of Brueckheimer'224, Catellano'750, Ko'407 discloses all aspects of the claimed invention set forth in the rejection of claims 33 as described above, in particular, Brueckheimer'224 discloses IP traffic. Ko'407 discloses sending requests to allocated circuit switch ISDN resources.

Neither Brueckheimer'224, Catellano'750 nor Ko'407 explicitly discloses pass an traffic request to a destination node and to establish an traffic path after having determined that all nodes along the proposed path have accepted an traffic request.

However, the above-mentioned claimed limitations are taught by Houji'197. In particular, Houji'197 teaches pass an traffic request (see FIG. 1, Node N1; also see FIG. 2, step 20, connection request process and pass by Node N1) to a destination node (see FIG. 1, destination Node N5; see FIG. 2, to destination node, step 23) and to establish an traffic path (see FIG. 1, a path between N1 and N5; see FIG. 2, establishing the path, step 23-26) after having determined that all nodes (see FIG. 1, Nodes N2-N4, N7) along the proposed path (see FIG. 1, the lowest QoS path between N1 and N5; see FIG. 2, step 21) have accepted an traffic request (see FIG. 2, steps 23-26; accept request); see col. 2, lines 45 to col. 3, lines 27).

In view of this, having the combined system of Brueckheimer'224, Catellano'750, Ko'407, then given the teaching of Houji'197, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Brueckheimer'224, Catellano'750, and Ko'407, by providing establishing end-to-end path between source and destination node upon accepting the connection request by the nodes along the path, as taught by Houji'197. The motivation to combine is to obtain the advantages/benefits taught by Houji'197 since a2 states at col. 1, line 30 to col. 2, lines 2315 that such modification would provide an alternate routing in a connection-oriented network in which a plurality of nodes are interconnected by the communication links.

Allowable Subject Matter

15. Claims 11, 24, 32, and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 571-272-3085. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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10/14/04

BRIAN NGUYEN
PRIMARY EXAMINER